

b. The absence of a flagellum.

c. The form of the penis and vas deferens.

There are few anatomical points which connect either of the above species with *T. haliotidea*, and there are no grounds whatever for retaining *T. scutulum* as a variety of *T. haliotidea*.

The generative systems of *T. bisulcata*, Risso, and *T. Pecchiolii*, Bourg.*, have been compared with those of all the above three species, and they agree very closely with *T. scutulum*, of which both are probably varieties; but a further investigation of their general anatomy is desirable before finally classing them as such.

EXPLANATION OF PLATE I.

Fig. 1. *Testacella haliotidea*, Drap.

Fig. 2. *Testacella scutulum*, Sowerby.

Fig. 3. *Testacella Maupoi*, Fér.

Fig. 4. *Testacella haliotidea*, Drap. Variation in the form of the penis.

alb.g. Albumen gland.

fl. Flagellum.

h.d. Hermaphrodite duct.

h.g. Hermaphrodite gland.

ov. Oviduct.

p. Penis.

pr. Prostate.

p.r.m. Penal retractor muscle.

r.d. Receptacular duct.

r.s. Receptaculum seminis.

v. Vestibule.

v.d. Vas deferens.

vg. Vagina.

IV.—On the Names or Existence of three Exotic Starfishes.

By F. JEFFREY BELL, M.A.

I HOPE the following notes will be found to be of some assistance in the systematic nomenclature of Asteroidea.

"*Asterina marginata* (Val.), Perrier."

The species referred to thus in the 'Challenger' Report of Asteroidea should be called *A. stellifer*, Möbius. So far as Valenciennes is concerned he only wrote a manuscript label for the Museum in the Jardin des Plantes. Hupé, in 1857, printed the name in vol. iii. (Mollusques) p. 100 of the Exp. de l'Amér. du Sud, but it is a *nomen nudum*. In 1859 Möbius, in the Abh. Geb. Naturw. Hamburg, iv. 2, p. 4, described *Asteriscus stellifer*, and, in 1860, Lütken (Vid.

* Boll. Mus. Zool. Torino, 1888, vol. iii. no. 43, pp. 1-10, 1 pl.

Medd. 1859 [1860], p. 57) described *Asteriscus brasiliensis*, and in a footnote at the end of his memoir identified his with Möbius's species.

The synonymy of this species should therefore run as follows:—

Asterina stellifer.

Asteriscus minutus, M. & Tr. Syst. Ast. (1842), p. 41 (not Gray, 1840).

Asteriscus stellifer, Möbius, Abh. Geb. Naturw. Hamburg, iv. 2 (1859), p. 4; Verrill, Trans. Conn. Acad. i. ("1867"), p. 343.

Asteriscus brasiliensis, Lütken, Vid. Medd. 1859 (1860), p. 57.

Asteriscus marginatus, Val. MSS.; Hupé, n. n.; Perrier, Ann. Sci. nat. xii. (1869), p. 289.

Asterina stellifera, Lütken, Vid. Medd. 1871, p. 301.

Asterina marginata, Perrier, Arch. zool. exp. v. (1876), p. 211; Slad. Chall. Rep., Ast. (1889), p. 774.

Goniodiscus articulatus.

Mr. Sladen (Chall. Rep. Ast. p. 754) writes "*G. articulatus* (Linné), de Loriol," meaning, I believe, by this formula that Linnæus named this species and de Loriol put it in the genus *Goniodiscus*; and on his principles—those of a writer who accepts pre-Linnean quasispecific or distinctly nonspecific names as specific appellations—he is quite right.

M. de Loriol (Rec. Zool. Suiss. i. p. 638) writes "*Goniodiscus articulatus* (Linné), Lütken;" this collocation of words must mean something different from Mr. Sladen's, as Dr. Lütken put the species in the genus *Goniaster*; and I take it to mean Linnæus *before* the tenth edition of the 'Systema Naturæ' named this species, and Lütken revived the name.

I do not see on what grounds we are to associate Linnæus's name with this species: in the tenth and twelfth editions of the 'Systema Naturæ' it is included under *A. aranciaca*, and it is to Lütken that the credit is due of distinguishing the form and reviving the name.

The 'Museum Tessinianum,' in which *A. articulata* is described and figured, bears date 1753, or is anterior to the tenth edition by five years*; it is said by well-qualified bibliographers (see Cat. Libr. Mus. Pract. Geol.) that the work was published privately, though Count Tessin's preface hardly supports this view.

If we accept 1758 as the year from which to start we must

* "1758, the zoological *ab urbe condita* of binominal chronology," Lovén, Echinoid. Linn. (1887), p. 50.

associate the name of Lütken, and not Linnæus, with the species under discussion. But if we do this we come at once into contact and opposition with the views of Dr. Lütken himself, who (Vid. Medd. 1864, p. 161) replaces *O. clavatus*, M. & Tr., by *O. dorsatus*, L., *A. dorsata* being one of the three species of *Asterias* mentioned in the Mus. Tessin.

Dr. Lütken has done so much for our knowledge of Echinoderms, and has treated questions of nomenclature in so reasonable a manner, that I am sorry to appear to disagree with him; but I think we are exchanging firm ground for shifting sands if we budge from 1758 as the year from which binominal appellations are to begin.

Those who accept this view will write the synonymy of the two species thus:—

Goniodiscus articulatus.

Goniaster articulatus, Lütken (ex Linn. Mus. Tessin. (1753), p. 114), Vid. Medd. 1864, p. 147.

Asterias aranciaca, Linn. Syst. Nat. 1758, p. 662 (pars).

Goniodiscus sebæ, M. & Tr. Syst. Ast. (1842), p. 58; Perrier, Arch. zool. exp. v. (1876), p. 46 (pars).

Goniodiscus articulatus, de Loriol, Rec. Zool. Suiss. i. (1884), p. 638.

Pentaceros clavatus.

Asterias nodosa, Linn. Syst. Nat. 1758, p. 661 (pars).

Oreaster clavatus, M. & Tr. Syst. Ast. (1842), p. 49.

Oreaster dorsatus, Lütken (ex Linn. Mus. Tessin. (1753), p. 114), Vid. Medd. 1864, p. 161; Bell, P. Z. S. 1884, p. 77.

Pentaceros dorsatus, Perrier, Arch. zool. exp. v. (1876), p. 61.

A Phantom Species.

"Goniodiscus gracilis, Gray."

This is one of the most curious inventions I have ever met with. The hare seems to have been started by Dr. von Martens, who (Arch. f. Nat. 1866, p. 86) writes:—

"c. RANDASIA, Gray.

"Goniaster Luzonicus, Gray, Ann. mag. n. h. vi., 1841. Philippines.

"Goniaster gracilis, Gray, Ann. mag. n. h. vi., 1841. Ternate (Molukken)."

A reference to the volume cited—it is of some significance that Dr. von Martens gives no page—shows that the last two lines of this quotation are not to be found either following the reference to *Randasia luzonica* (p. 278), or, indeed, in

any other part of Gray's paper. I cannot find that Gray at any time described a species called *Randasia*, *Goniaster*, or *Goniodiscus gracilis*, or, indeed, ever gave the name *gracilis* to any Asterid except a *Dactylosaster* (i. e. *Ophidiaster*) from the west coast of Columbia.

Prof. Perrier takes no notice of this species, if such it be, in his well-known revision; but in his Essay on the geographical distribution of starfishes (Nouv. Arch. Mus. i. (1878) p. 82) he writes:—" *Goniodiscus gracilis*, Gray Moluques." On p. 24 he speaks of *Pentagonaster gracilis*, Gray (Moluques) (Philippines). Whether these two names are meant to be synonyms I cannot of course say; but the latter name does not find a place in the systematic list. From what I have already said it is clear I have no information to give as to *Pentagonaster gracilis*, Gray. I have something more than a suspicion that M. Perrier is here quoting Dr. von Martens from memory.

The only other author who speaks of *Goniodiscus gracilis* is Mr. Sladen, who gives it in his list of known species at the end of his 'Challenger' Report. But I understand that he bases his citation on Prof. Perrier's list, and I may therefore be content with merely mentioning his name, and ask why, under the circumstances, *Pentagonaster gracilis* was not also cited?

It may fairly be concluded that "*Goniodiscus gracilis*, Gray," is a species which Dr. J. E. Gray at any rate never described, and I am inclined to think that the whole citation is due to an error on the part of some copyist employed by Dr. von Martens. For the present I would suggest that "*Goniodiscus gracilis*, Gray," be the technical term for the Sea-Serpent, for the one has as shadowy an existence as the other.

This suggestion is not made in a spirit of mere buffoonery; in the one case as the other we have assertions repeated without discrimination or independent inquiry; this may be pardoned, though it is not justifiable, in a penny-a-lining paragraphist who is in want of a crust of bread, but it is unpardonable and unjustifiable in any one who aspires to be the author of a zoological monograph.

Gymnasterias valvulata.

Gymnasterias valvulata, Perrier, Arch. zool. exp. v. (1876), p. 97.

The locality of the specimen described by Prof. Perrier is Lord Howe's Island, and not Lord Hood's Island, as stated in the text; Lord Hood's Island is one of the Low Group, and

is not the same as Hood Island. I presume a misunderstanding on the latter point was the cause of Mr. Sladen giving Galapagos Islands as the locality. M. Perrier states that the second specimen he saw in the British Museum was from an unknown locality; however that may be, there is a specimen from Moreton Bay. So that the localities are not equatorial and eastern Pacific, but subtropical and western Pacific.

V.—*Natural History Notes from H.M. Indian Marine Survey Steamer 'Investigator,' Commander C. F. Oldham, R.N., commanding.*—Series II., No. 8. *Note on Calypterinus Allmani.* By A. ALCOCK, M.B., C.M.Z.S., Officiating Superintendent of the Indian Museum.

IN their Report upon the 'Challenger' Alcyonaria, Messrs. Perceval Wright and Studer describe* in the family *Primnoidæ* a remarkable new species, *Calypterinus Allmani*, from the vicinity of Fiji. The 'Challenger' specimens are stated to have been fragments about 100 millim. long.

We have recently on board the 'Investigator' dredged several fine branches, one of them 200 millim. in length, of this Alcyonarian; and as it is such a beautiful and remarkable form I venture to offer a few observations, complementary of the original description, upon our specimens.

The axis is branched in either one or two planes; when in two planes they are at right angles to one another, and the branching in one plane (the lateral) greatly predominates.

The branches like the axis are quite rigid, and they ascend with a gentle curve parallel to one another to form a lofty compressed rigid umbel or candelabra: they have little tendency to give off secondary branches, but where such exist they arise singly low down near the origin of the primary branch and ascend parallel with it in the same plane. No tertiary branches occur in any of our specimens. All the branches repeat the same gentle curve with the most remarkable uniformity.

The polyps, as stated by Messrs. Wright and Studer, are disposed in whorls of from four to seven, and they hang head downwards, or downwards and outwards, they having evidently the power of flexion and extension upon the stem.

* The Voyage of H.M.S. 'Challenger,' Zoology, vol. xxxi. pp. 53 and 54, pl. xi. figs. 1, 1a, pl. xiv. fig. 5, pl. xx. fig. 2.